

Claims

[c1] 1. A circuit breaker comprising:

 a handle yoke having a projection extending therefrom, said handle yoke being movable between an on position and an off position;

 a contact arm supporting at least one contact, said contact arm being movable between a closed position and an open position; and

 a crank operably coupled to said handle yoke and said contact arm to move said contact arm from the closed position to the open position when said handle yoke is moved from the on position to the off position, said crank having a blocking lever extending therefrom, said blocking lever interacting with said projection of said handle yoke to prevent said handle yoke from being moved to the off position when said contact arm is fixed in the closed position.

[c2] 2. The circuit breaker of claim 1, wherein:

 said projection further comprises a first surface; and

 said blocking lever further comprises a second surface cooperating with said first surface such that rotation of said blocking lever when said contact arm moves be-

tween the closed and open positions, without said blocking lever interacting with said projection of said handle yoke.

- [c3] 3. The circuit breaker of claim 2, wherein when said contact arm is prevented from moving between closed and open positions, said second surface of said blocking lever interacts with said first surface of said projection of said handle preventing movement of said handle yoke to the off position.
- [c4] 4. The circuit breaker of claim 1, wherein said blocking lever is integrally formed with said crank.
- [c5] 5. The circuit breaker of claim 1 wherein said at least one contact comprises a contact located at one end of said contact arm.
- [c6] 6. The circuit breaker of claim 1 wherein said at least one contact comprises a pair of contacts, each of said contacts located at an opposing end of said contact arm.
- [c7] 7. The circuit breaker of claim 1 further comprising:
 - a cradle;
 - a toggle linkage having an upper link and a lower link, said upper link being pivotally attached to said cradle at one end and to a toggle pivot at an opposite end, said lower link being pivotally attached to said toggle pivot at

one end and to said crank at an opposite end; and a spring connected between said toggle pivot and said handle yoke to bias said crank in a direction for moving said contact arm to an open position when said handle yoke is moved from an off to on position.

- [c8] 8.The circuit breaker of claim 7 wherein:
 - said crank and said contact arm rotate on a common axis and
 - said crank is coupled to said lower link at a first pin and said crank is coupled to said contact arm by a second pin, said second pin being offset from said axis.
- [c9] 9.The circuit breaker of claim 8 wherein said second pin is diametrically opposed to said first pin.
- [c10] 10.The circuit breaker of claim 8 wherein said blocking lever extends from said crank opposite said first pin with said common axis therebetween.
- [c11] 11.The circuit breaker of claim of claim 8 wherein said blocking lever is diametrically opposed to said first pin and said second pin.
- [c12] 12.The circuit breaker of claim 7, wherein said spring biases said handle to the on position when the contact arm is fixed in the closed position and said handle is attempted to the off position.

[c13] 13. A method to prevent movement of a handle yoke to an off position from an on position when circuit breaker contacts are fixed to the on position, the method comprising:

configuring a handle yoke having a projection extending therefrom, said handle yoke being movable between an on position and an off position;

aligning a contact arm supporting at least one contact with a corresponding contact, said contact arm being movable between a closed position and an open position;

operably coupling a crank to said handle yoke and said contact arm to move said contact arm from the closed position to the open position when said handle yoke is moved from the on position to the off position; and
configuring said crank having a blocking lever extending therefrom, said blocking lever interacting with said projection of said handle yoke to prevent said handle yoke from being moved to the off position when said contact arm is fixed in the closed position.

[c14] 14. The method of claim 13 further comprising
configuring said projection with a first surface; and
configuring said blocking lever with a second surface co-operating with said first surface such that rotation of said blocking lever when said contact arm moves be-

tween the closed and open positions, without said blocking lever interacting with said projection of said handle yoke.

- [c15] 15. The method of claim 14, wherein when said contact arm is prevented from moving between closed and open positions, said second surface of said blocking lever interacts with said first surface of said projection of said handle preventing movement of said handle yoke to the off position.
- [c16] 16. The method of claim 13 further comprising: said integrally forming said blocking lever with said crank.
- [c17] 17. The method of claim 13 wherein said at least one contact comprises a contact located at one end of said contact arm.
- [c18] 18. The method of claim 13 wherein said at least one contact comprises a pair of contacts, each of said contacts located at an opposing end of said contact arm.
- [c19] 19. The method of claim 13 further comprising:
 - employing a toggle linkage having an upper link and a lower link;
 - pivotaly attaching said upper link to a cradle at one end and to a toggle pivot at an opposite end;
 - pivotaly attaching said lower link being attached to said

toggle pivot at one end and to said crank at an opposite end; and

connecting a spring between said toggle pivot and said handle yoke to bias said crank in a direction for moving said contact arm to an closed position when said handle yoke is moved from an off to on position.

[c20] 20. The method of 19 further comprising:

- configuring said crank and said contact arm to rotate on a common axis; and
- coupling said crank to said lower link at a first pin and said crank is coupled to said contact arm by a second pin, said second pin being offset from said axis.